Amendments to the Claims

1-65. (canceled)

66. (currently amended) An apparatus for exposing a magnetic microparticle to a plurality of liquids, comprising:

a) a diamagnetic substrate having a workplace defining x-y coordinates, and for levitation of said microparticle;

b) a plurality of stations located at different known workplace x-y coordinates, each station having a chamber for holding a selected liquid, and a chamber opening forming a gas/liquid interface when said chamber contains such liquid, each station being adapted to carry out or participate in one or more selected operations;

c) a driving structure positioned adjacent said workplace, said driving structure having ~~(i) a first set of~~ drive elements selectively energizable (i) to cause an interaction between selected energized drive elements and one or more selected microparticles, to move said microparticles between selected workplace x-y coordinates, with said microparticles in a levitated state, through interaction of said drive element with said microparticles' dipoles, and (ii) ~~a second set of drive elements associated with each station, selectively energizable~~ to cause an interaction between selected energized drive elements and one or more selected microparticles, to move said microparticles across said gas/liquid interfaces at said stations; and

d) a controller operatively linked to said ~~first and second sets of~~ drive elements for energizing said ~~first and second sets of~~ drive elements to move said one or more selected microparticles between or among selected stations, and in and out of stations, to accomplish a desired laboratory-activity.

67. (currently amended) The apparatus of claim [[66]]68, wherein said stations are substantially in-plane with said x-y movement of said microparticles on said substrate, and said chamber opening includes a capillary port communicating between interior of said chamber and said workplace.

68. (currently amended) The apparatus of claim 66, wherein said ~~second set of~~ drive elements include[[s]] a first set of drive elements for moving microparticles between selected x-y coordinates and a second set of drive elements to move microparticles across said gas/liquid interfaces, said second set of drive elements including, for each station, an exterior drive element on said external side of said station's port, and an internal drive element on said internal side of said station's port.

69. (currently amended) The apparatus of claim [[68]]67, wherein said interior and exterior drive elements each includes first and second electromagnetic coils disposed on opposite lateral sides of said capillary port.

70. (original) The apparatus of claim 68, wherein said interior drive element associated with each station is energizable to move said microparticles into said chamber, and said exterior drive element associated with each station is energizable to move said microparticles out of said chamber.

71-74. (canceled)

75. (previously presented) The apparatus of claim 66 wherein one of more said stations has one or more chambers, each chamber separated from other chambers by a capillary port designed or configured to contain a gas and defines a gas/liquid interface between each chamber and said capillary port, when said chambers are filled in liquid.

76. (currently amended) The apparatus of claim 75, wherein a plurality of laboratory stations are arranged in a hub-and-spoke arrangement comprising a central station having a chamber with one or more central station connecting ports, and radial-spoke stations, one or more of said spoke stations having a chamber and one or more connecting ports, at least one of said spoke station connecting ports,

and said ~~hub~~central station connecting ports having a capillary segment intended to contain a gas and define a gas/liquid interface between each chamber and said capillary port, when said chambers are filled with a liquid.

77. (currently amended) The apparatus of claim [[66]]68, wherein said chamber is defined by a cavity formed in said substrate, said chamber opening is formed by an upper surface of liquid contained in said cavity, and said second set of drive elements are energizable to move said microparticles in a substantially z direction across said gas/liquid interface into and out of said chamber.

78. (original) The apparatus of claim 77, wherein said second set of drive elements associated with such cavity-defined chamber include, exterior and interior drive elements disposed on exterior and interior sides of said chamber opening, respectively.

79-90. (canceled)

91. (new) An apparatus for use in performing multi-particle operations, comprising:

a) a diamagnetic substrate having a workplace defining x-y coordinates, and a plurality of workstations;

b) a plurality of magnetic microparticles adapted to move over the surface of said workplace between and among said workstations;

c) a driving structure positioned adjacent said workplace, said driving structure having a plurality of drive elements selectively energizable to move a linear train of selected microparticles coordinately between selected workplace x-y coordinates, with said microparticles in a levitated state, through interactions of said drive elements with said microparticles' dipoles; and

d) a controller operatively linked to said drive elements for energizing said drive elements to move said microparticles between or among selected x, y

coordinates to accomplish said multi-particle operation.

92. (new) The apparatus of claim 91, wherein said microparticles, each of said microparticles having a magnetic dipole, in said train are magnetically coupled in a direction of train movement.

93. (new) The apparatus of claim 91, wherein said microparticles, each of said microparticles having a magnetic dipole, in said train are magnetically uncoupled in a direction of train movement.